

### **Amendments to the Drawings**

A replacement drawing sheet 34 depicting Fig. 32 and Fig. 33 is included herewith.

Furthermore, please cancel drawing sheets 35 and 36, as the correct Fig. 34 is shown in drawing sheet 37.

**Remarks: Claim Amendments**

Claims 1-11, 13, 15-29, and 31-40 were amended to correct the informalities noted by the Examiner and to more distinctly recite the claimed invention. These amendments do not constitute new matter and should require little of the Examiner's time for consideration.

Specifically, in Independent Claims 1 and 19, the recited second pulser further comprising an inverted output is described in the originally filed specification, such as in Paragraph 240 of the published patent application. A similar recitation is in the combining step of Independent Claim 37.

## **Remarks: Examination Report**

### **1. Section 2 of the Examination Report.**

The drawings were objected to under 37 CFR 1.83(a) for failing to show every feature of the invention specified in the claims.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are submitted herein. Applicant contends that the description and claims are sufficiently specific and detailed to support the current amendment to the drawings, and that the amendment to the drawings does not constitute new matter.

### **2. Section 3 of the Examination Report.**

Claims 1-40 were rejected under 35 U.S.C. 112 for containing subject matter not described in the specification in such a way as to enable one skilled in the art to which it pertains.

Applicant respectfully requests reconsideration of this rejection, as it is only original drawings that are deficient. The claims and the description are not deficient. Therefore, Applicant contends that the claims should not be rejected under 35 U.S.C. 112 on these grounds.

Applicant respectfully notes that MPEP 608.01(l) Original Claims states:

*“In establishing a disclosure, applicant may rely not only on the description and drawing as filed but also on the original claims if their content justifies it.”*

*“Where subject matter not shown in the drawing or described in the description is claimed in the application as filed, and such original claim itself constitutes a clear disclosure of this subject matter, then the claim should be treated on its merits, and requirement made to amend the drawing and description to show this subject matter. The*

*claim should not be attacked either by objection or rejection because this subject matter is lacking in the drawing and description. It is the drawing and description that are defective, not the claim."*

Since the claims are not defective in this regard, Applicant requests reconsideration of the rejection under 35 U.S.C. 112.

### **3. Sections 4-11 of the Examination Report.**

Claims 1-40 were rejected under the second paragraph of 35 U.S.C. 112 for various informalities noted by the Examiner.

Claims 1-40 were amended to correct the informalities noted by the Examiner. Reconsideration of this rejection is respectfully requested.

### **4. Sections 12-37 of the Examination Report.**

Claims 1-8 and 19-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (US 2004/0070443). Regarding the Independent claims, the Examiner directed Applicant's attention to Figures 1 and 4, and paragraphs 4-6 and 27-40.

Adams teaches a pulse-generation circuit having a clock signal input, and it produces an output signal characterized by a series of positive pulses. The clock signal input has a high logic level that occurs for an amount of time greater than the sum of delays from the delay elements 402A-402C shown in Fig. 4. The signal XN produced by the delay elements 402A-402C results from propagating the clock signal through the delay elements and ANDing it with the original clock signal. The output signal ACLK is a series of positive pulses with pulse widths equal to the total delay from the delay elements 402A-402C plus the delay of the NAND gate 424.

The pulse-generation circuit shown in Adams does not produce a modulated signal having a three-level signal constellation, such as recited in the amended

independent Claims 1, 19, and 37. Rather, the output signal ACLK is a series of positive pulses, which is a two-level signal, such as shown in Fig. 5 and described in paragraph 42. Adams, nor any other combination of cited references, suggests to adapt the pulse-generation circuit in Adams to produce a ternary signal.

Adams does not employ an input signal comprising three symbol values, such as recited in the amended independent Claims 1, 19, and 37. Rather, the CLK signal shown in Adams is bi-level, such as depicted in Fig. 5 and described in paragraph 41. There is no combination of Adams with any of the cited references that suggests processing an input signal comprising more than two symbol values.

Adams does not employ one pulser that generates a high signal for each of the plurality of symbols having a first symbol value and a low signal for each of the plurality of symbols having a second symbol value or a third symbol value, and another pulser that generates a high signal for each of the plurality of symbols having the third symbol value and a low signal for each of the plurality of symbols having the second symbol value or the first symbol value, such as recited in the amended independent Claims 1, 19, and 37. Rather, Adams teaches only the processing of bi-level inputs, such as depicted in Fig. 5 and described in paragraph 41. There is no suggestion among the cited references to adapt the circuit in Adams to generate high and low signals in this manner.

Adams does not teach inverting (i.e., subtracting) one of two signals that are combined, such as recited in the amended independent Claims 1, 19, and 37. Whereas Adams depicts an NAND gate 424 in Fig. 4, signal B depicted in Fig. 5 generated by the NAND gate 424 is a sequence of positive pulses – not negative (i.e., inverted) pulses. The combination of Adams with any other cited reference does not teach that any of the signals in the pulse-generation circuit should be made negative.

Since the combination of Adams with any of the cited references does not show or suggest the above recited novel features of the amended independent Claims 1, 19, and 37 are non-obvious under 35 U.S.C. 103(a).

Similarly, since the dependent claims 2-18, 20-36, and 38-40 have all of the limitations of the independent claims 1, 19, and 37, respectively, the dependent claims are non-obvious under 35 U.S.C. 103(a).

## **5. Conclusion.**

The Prior Art of Record has been reviewed and is considered by the Applicant to be inconsequential with respect to the claimed invention. The Applicant submits that every effort has been made to address the Examiner's objections and that the Application is now in condition to proceed to grant.

Yours Respectfully,

A handwritten signature in black ink, appearing to read "Steve J. Shattil", with a stylized flourish at the end.

Steve J. Shattil

P.O. Box 17355

Boulder, CO 80308-0355

(720) 234-4351